

**Governor's Commission on Climate Change
Transportation and Land Use Workgroup**

**Draft Recommendations
10/17/08**

NOTE: Items in italics are still under discussion by the workgroup.

The defining charge to the 2008 Climate Change Commission is to create an action plan that will reduce Virginia greenhouse gas emissions by 30% from business-as-usual expected emissions by the year 2025. The Virginia Energy Plan in 2007 developed steps that will achieve a portion of this 30% reduction – the Climate Change Commission must outline steps to achieve the remainder of this goal.

The Transportation and Land Use Workgroup has looked carefully at many possibilities for contributing to the desired reductions in GHG emissions. We have done our best to make sure each of our recommendations is consistent with the short- and long-term prosperity and welfare of the citizens of Virginia. Wherever possible, we have tried to offer recommendations that provide additional benefits, including environmental, economic, health, and cultural benefits.

Transportation sources emitted 53.5 million metric tons of GHG in 2005, approximately 1/3 of the overall GHG emissions in the Commonwealth. The Business-As-Usual scenario recently prepared by DEQ predicts that transportation-generated GHG in 2025 will be 78.1 million metric tons. Until recently, the transportation sector represented the fastest growing source of GHG emissions in the state, and it is still projected to be the fastest growing source through at least 2025. Over the past year, however, primarily as a result of higher gasoline prices, emissions from the transportation sector most likely did not increase or may have decreased as driving decreased. Recent experience suggests that the growth rate in vehicle miles traveled (VMT) will not continue at the historic level of 1.9% on an annual basis. Through the first seven months of 2008 (which is the latest data available), VMT throughout the United States is down by almost 3% versus 2007. If the slower growth rate persists over the middle- and long-run, there may be a corresponding slower growth rate in transportation-related GHG emissions than previously forecast. Declines in VMT projected with confidence should be part of the continuing discussion on how best to respond to the challenge of climate change.

The 2007 CAFE standards adopted by Congress are forecast to have a major impact on transportation-related GHG emissions in Virginia, without further action on the part of Virginia's leaders. A vehicle fleet averaging 35 mpg will emit fewer GHG than one averaging 22 mpg. The Department of Environmental Quality has completed a preliminary analysis of the effect of the 2007 CAFE standards, and projects that Virginia

will see a 17 million metric ton reduction from the Business-As-Usual forecast in 2025. This would represent a 22% reduction in the transportation emissions in 2025, although VMT growth could erase much of the GHG-gain from the new CAFE standards. The estimated GHG reduction is heavily dependent on a continuation of the historical rate of fleet turnover which currently is not being achieved. A number of the workgroup recommendations are aimed at helping accelerate fleet turnover, which if implemented could mitigate the current slowdown and ultimately help achieve the CAFÉ benefits earlier than 2025.

As we considered our recommendations, we focused on three primary categories: (1) initiatives that reduce GHG emissions through improved vehicle fuel economy, (2) initiatives that reduce GHG emissions through low-carbon (alternative) fuels, and (3) initiatives that reduce GHG emissions through transportation, land use, and operational improvements.

There was a strong consensus among workgroup members that actions to support or accelerate measures in each of these categories should be actively encouraged by state policy, state incentives, or state standards, with the Commonwealth itself setting an example for individuals, local governments and the private sector, as well as providing funding and policy support.

The workgroup notes that the report, “Commission on Transportation in Urbanized Areas,” commissioned by Governor Mark R. Warner and finalized in 2005, contains a myriad of transportation and land use recommendations, many of which complement the recommendations of the workgroup. The report can be found at <http://www.vtrc.net/urbanized/pdf/FinalCommissionReport.pdf>

The workgroup also notes that additional efforts are necessary to assess and adopt steps to reduce the annual 17 million metric tons of GHG emissions from off-road vehicles, trains, airplanes, and ports.

A. Initiatives that reduce GHG emissions through improved fuel economy

1. Executive Order 48 (2007) directs the Department of General Services to include policies and procedures for the purchase of fuel-efficient, low-emission state-owned vehicles in its fleet management program. EO 48 further directs DGS to include policies and procedures for leasing vehicles that give a preference to compact, fuel-efficient, and low-emission vehicles. State vehicles used for law enforcement and emergency response are exempt; however, public safety agencies are expected to make all reasonable efforts to reduce transportation energy use when possible in ways that do not adversely impact their missions and ultimately the safety of our citizens.

As of July 2008, there were 4,187 passenger vehicles in the DGS fleet, and they averaged 27.63 miles per gallon. There were an additional 12,636 state owned vehicles not managed by DGS OFMS. These vehicles averaged 15.41 miles per gallon. The difference in MPG can be attributed to the various models of agency owned vehicles (i.e., State Police Crown Victorias) that do not get the higher MPG of DGS managed vehicles which are primarily compact model vehicles.

To strengthen these current efforts, Virginia should set minimum miles-per-gallon standards for the fleet owned or leased by the Commonwealth as well as standards for the appropriate class of rental vehicles requested by state employees in the transaction of state business. These standards should be phased in to allow effective implementation, and should include achieving the 2025 CAFE standard by 2015. In addition, state policies for purchasing and leasing vehicles should give a preference for the most fuel-efficient vehicles available. Virginia should recommend such standards for local government-owned fleets (especially school buses and transit vehicles), non-governmental organizations, and private businesses, and provide incentives to groups that adopt the suggested minimum standards. For example, the state should provide a higher rate of matching funds to localities that adopt the standards. Virginia also should develop technical assistance capacity to help inform local governments about their range of vehicle choice, costs, and benefits.

2. Virginia should create state incentives for the purchase of fuel-efficient vehicles, regardless of energy source. Incentives could include tax credits, reduced sales tax, reduced car tax, or lower registration fees, or other incentives. The public policy goal is to accelerate the rate of fleet turnover, with a particular emphasis on the introduction of ever more fuel efficient vehicles.

3. Virginia should canvass existing federal and independent research on measures that can improve vehicle fuel efficiency, such as improving the aerodynamics of larger vehicles (especially tractor-trailers) to reduce the turbulence of their wake and reduced rolling resistance in tires. Virginia also should add funding for state research as appropriate, and ask its federal legislators to expand federal appropriations for such research.

4. Virginia should advocate, through its federal delegation, the accelerated establishment of CAFE standards for heavy trucks (which currently have no fuel economy standards) and stronger CAFE standards for passenger vehicles.

5. Virginia should promote efforts to educate all drivers, including those taking driver education, about behavioral changes that can significantly boost energy efficiency, including considering participating with other states in EcoDrivingUSA.

6. Virginia should seek to reduce emissions from older diesel engines (e.g., trucks, school buses) through a retrofit or retirement program, including incentives to encourage retrofits.

7. Virginia should provide funding for increased enforcement of existing speed limits.

B. Initiatives that reduce GHG emissions through low-carbon (alternative) fuels.

8. Virginia should become a leader in promoting low-carbon fuel options through incentives and research. These options include low-carbon gasoline blends, biodiesel,

natural gas, plug-in hybrids, hydrogen and other alternative fuel technologies. Virginia should promote and support siting of refueling and recharging stations for low-carbon fueling stations on state- and local government-owned land, including interstate highways, rest stops, and truck stops. Virginia should assess the feasibility and benefits of vehicles that can plug into the electric grid, and identify and enhance plug-in charging areas and services, to make and market Virginia as “hybrid friendly.”

9. Virginia should create a pool of research funds to reward and stimulate alternate fuel and battery research at Virginia’s colleges and universities. Virginia should ask its federal legislators to expand federal research appropriations for such research as well. Virginia should ask scientists at its universities to study the GHG impact of cellulose-based ethanol, and of other biofuels. Virginia Tech’s switch grass research and Old Dominion University’s algal biofuels work are excellent examples of the productive work being accomplished in Virginia today.

10. Virginia should generate a proposed carbon standard for the fuels transportation vehicles use, to be evaluated in the near years, and to be phased in over the years leading to 2025.

11. Virginia should evaluate the cost effectiveness of funding to accelerate the electrification of truck stops and the adoption of idling avoidance technology, and increase enforcement of the state anti-idling statute. Where feasible, use of renewable energy to support truck stop electrification should be considered.

12. Virginia should lead the Atlantic and Southeast Regions in establishing one standard for diesel biofuel (e.g. B15) for state-owned equipment and school buses, and work with our neighboring states to adopt this same standard.

C. Initiatives that reduce GHG emissions through transportation, land use, and operational measures.

Initiatives that reduce GHG emissions through transportation, land use, and operational improvements include actions to reduce congestion, increase accessibility, and provide a wide range of transportation choices that result in fewer or shorter automobile trips while still accomplishing the desired trip outcomes (e.g. commuting to work, personal trips for shopping, medical appointments, education, leisure travel, etc.). Such actions include providing greater access to transit, including rail transit; shifting freight transport from truck to rail; city and town revitalization, infill development, transit-oriented and transit-ready development, community designs that promote walking or bicycling, and community designs that facilitate combining of trips or shorter trips; and telecommuting, telebusiness or telecommunication.

The workgroup had a spirited discussion regarding whether the ultimate objective was to reduce vehicle miles of travel or to reduce emissions. A strong consensus emerged that reducing emissions is our primary objective and the transportation, land use, and operational improvements for achieving this objective should focus on expanding consumer choice, improving the efficiency of the existing transportation system, and promoting community designs that result in lower emissions. Reduction in VMT and

associated GHG emission reductions may very well be the consequence of these strategies. The workgroup also notes that reduction in VMT obtained through our recommendations will also have positive co-benefits such as reduced congestion, improved air quality, and lower impacts on our transportation infrastructure.

The workgroup applauds the Commonwealth for steadily increasing its investment in rail and transit funding over past six years. For fiscal years 2007-2010, \$822 million in transit funding is available, a 51 percent increase over fiscal years 2003-2006. During the same time frame, \$210.1 million in rail funding is available, a 500 percent increase over fiscal years 2003-2006. While rail and transit funding has increased, so too has the demand for transportation options with the growth in freight imports and exports, the increasing congestion on highways, the rise in fuel prices and the need to reduce transportation GHG emissions. There was considerable consensus that Commonwealth should continue to increase its investments in passenger and freight rail, transit and other modes to ensure that Virginians can maintain their quality of life. Funding is also needed for walking and biking networks, improved customer access around transit stops, reengineering existing streets for operational improvements and access management, improved street crossings, and Travel Demand Management.

13. Virginia should explore ways to send consumers better, more accurate signals of the costs of transportation. Pricing transportation on miles driven, and on the timing and congestion of the trips taken, can do much to reduce and consolidate discretionary travel (as much as 40% of all trips, and 54% of trips during peak periods). Our highway system must move toward greater use of pricing mechanisms that will charge for actual usage reflective of supply and demand (as virtually all other goods and services are priced).

14. Virginia should study and evaluate the feasibility of building HOT lane networks in large metropolitan regions (beyond those planned for the Beltway and I-95) to promote car pooling, consolidation of trips, and transit use, particularly where existing lanes are converted into HOT lanes. Excess revenues from HOT lanes should be used to support transit throughout such networks. Recent research indicates that HOT lane user fees can be less costly to lower income drivers than a transportation funding regime based on the gas tax.

15. Virginia should recognize that the current structure for funding regional transit operations is an impediment to sustaining transit operations and a severe impediment to the growth thereof. The provision of robust transit services in Virginia's localities is in the interest of the Commonwealth and should not depend primarily on property taxes to be sustained and grow. Therefore, Virginia should extend the regional revenue source for transit that exists in Northern Virginia throughout the Commonwealth. Further, Virginia should analyze the sufficiency of this source and ensure that the source is sufficient to provide for no less than a transit level of service "B" as defined by the Transit Capacity and Quality of Service Manual.

16. *Virginia should change the state transit funding formulas to include state funding for operations.*

17. Virginia should create signalization standards to improve the timing and the intelligence of traffic signalization across the Commonwealth, to support improved traffic flow, transit preference and priority, and improved pedestrian access.

18. VDOT should develop and implement access management plans to preserve new transportation corridors and to help restore the capacity of existing roads. Access management should be considered as a design alternative for all major road projects, to evaluate the cost effectiveness of various design options.

19. Virginia should amend its Corridor Analysis and project analysis process, required under many federal provisions such as environmental statutes, to make sure that transit, freight and passenger rail, and other transportation modes are included in every analysis.

20. The Commonwealth should amend current law pertaining to the Statewide Transportation Plan to require that the Plan include coordination of transportation and land use as a key policy goal. Further, the law should be amended to require the Plan to include quantifiable measures (including those called for in HB3202) and achievable goals relating to greenhouse gas reduction. Suggested goals include reduction of GHG emissions from the transportation sector, transit riders per mile of transit infrastructure, percentage of Virginians who walk or bike to work, and percentage of freight carried by rail. Progress towards the goals should be monitored through the annual Transportation Performance Report.

21. Virginia should undergo, in partnership with the Planning District Commissions and with local governments, statewide region-by-region scenario analyses for local transportation and land use planning. These will model and compare the differences in transportation costs, land used, environmental impacts, energy, water, fuel used, and GHG emissions of compact vs. sprawling land use patterns. The preferred scenario should be incorporated into local and regional plans and the Statewide Transportation Plan, and used to guide transportation system investments and future land use decisions.

22. Virginia should require that environmental analysis and review of major transportation projects/networks should include the GHG emissions network impacts projected to result. Virginia's MPO's should include GHG emissions in their regional transportation analyses and seek outcomes that help reduce GHG emissions. The Commonwealth Transportation Board should use such analyses to select projects for funding.

23. State agencies and institutions and local governments should take necessary actions to minimize vehicle miles traveled related to state and local operations. Virginia agencies and institutions should implement programs to promote alternatives to driving, including creating new or expanded benefits for state workers who take transit, walk, or bike to work, and create program examples for local governments and private businesses. These benefits should be equal to or greater than those provided for state employees to park their personal automobiles at work. All office buildings owned or rented by the

Commonwealth should provide bike racks. Where possible, all office buildings owned or rented by the Commonwealth should be located near transit facilities.

24. Virginia should evaluate the costs/benefits of a commuter tax credit, offering businesses tax savings for providing their employees with transportation benefits that provide an alternative to single occupancy vehicle commuting, such as transit passes, vanpool expenses, and cash in lieu of parking.

25. Virginia should continue to promote land conservation through steps such as tax incentives and matching grant programs, and evaluate additional incentives to landowners and authority to local governments to promote the preservation of natural carbon sinks.

26. The Commonwealth Transportation Board (CTB) has established roundabouts as the preferred alternative for projects involving reconstruction of intersections or new intersections, when roundabouts are determined to be feasible. The CTB should establish simple criteria to make roundabouts easier to build.

27. The CTB has amended its road construction standards to make new or upgraded roads more pedestrian and bike-friendly. The CTB should ensure that funding is available for localities to implement these standards. In addition, VDOT should compile and coordinate local and regional plans to develop a pedestrian and bicycle network.

28. VDOT should adopt a “complete streets” policy to design and operate roadways to allow safe, attractive, and comfortable travel for all users.

29. The CTB should develop and provide funding and technical assistance to encourage local governments to construct pedestrian and bicycle improvements.

30. Virginia should enhance the convenience of using transit compared to driving. Virginia should develop and provide funding and technical assistance to local governments to amend zoning codes that currently establish excessive minimum parking space standards and encourage local governments to apply parking maximums, market pricing of parking, shared parking, and other tools. Virginia’s PPTA can be used for the development of privately funded parking facilities that can enhance the desirability and accessibility of using mass transit.

31. Virginia should continue to promote its telework and flextime standards for eligible state employees, and should recommend that local governments and private businesses adopt these voluntary standards. Virginia should establish state and local incentives for electronic transactions (DMV, taxes, etc.) Virginia should expand the Telework!Va program and encourage private employers to adopt these standards, and should consider rewarding high-performing public and private employers who use telework well. The effectiveness of these transportation demand management measures should be compared to that of providing access to transit for workers and those doing business with the Commonwealth.

The workgroup notes that § 2.2-2817.1 of the Virginia Code requires each agency head to establish a telecommuting and alternative work policy for eligible employees. Each agency was required by July 1, 2009, to have a goal of not less than 25 percent of its eligible workforce participating in alternative work schedules. By January 1, 2010, each agency except State Police is required to have a goal of not less than 20 percent of its eligible workforce telecommuting. As this document is being finalized, no status reports are available on telecommuting or alternative schedules.

32. Virginia should continue to promote the expansion of broadband access to our homes and businesses, a key to trip avoidance, with full utilization of the Virginia Resources Authority loan program.

33. VDOT should allow its rights-of-way to be used for solar and wind connections to the power grid.

34. Virginia should improve and expand funding for passenger and freight rail service. The draft Statewide Rail Plan, for example, identifies a number of projects offering significant GHG reductions. Among other things, Virginia should increase funding for the Virginia Rail Enhancement Fund. The movement of freight via rail instead of over-the-road is typically three times more fuel-efficient. A ton of freight moved via rail will generate one-third the carbon footprint of the same or equivalent movement over the road via truck.

35. Within its allocation formula and funding decisions, the CTB should target available transportation funds towards existing communities and designated urban development areas and promote compact, walkable, transit-oriented development areas. Virginia should provide technical assistance, funding, and authority to localities to amend comprehensive plans and zoning ordinances to promote compact, walkable, transit-oriented development areas and to guide development to such areas.

36. Virginia should authorize and encourage cities, towns, and older suburbs to adopt the split rate property tax that applies a lower tax rate to buildings than on land to encourage redevelopment where there is existing infrastructure.

37. Virginia should work with lenders to provide and promote location efficient mortgages, which promote the purchase of homes in compact, mixed-use areas where there is less need to drive and therefore more discretionary income.

38. Virginia should encourage insurance companies to offer pay-as-you-drive insurance as an option to motorists (which is already permissible, but not currently offered, in Virginia).

39. Recognizing the difficulty of this task, Virginia should work with regional and local governments to harmonize the state transportation plans and local land use plans on the same five-year schedules.

40. Virginia should encourage local governments to establish tree canopy preservation goals through incentives and ordinances and provide technical assistance to

localities seeking to establish such goals. A specific statewide goal should be developed for 2025 or another target year.

41. Virginia should amend VDOT landscaping standards to minimize mowing, support tree preservation and increase carbon retention.

42. Virginia should establish tree planting and “tree banking” programs to expand our carbon sinks, and adopt a no net loss of carbon sequestration capacity standard for all state actions.

43. Virginia should develop specific goals and priority measures for the coming reauthorization of the federal surface transportation act that will reduce the GHG emissions from transportation, and work closely with our federal delegation and MPOs to achieve these goals and measures.

44. Virginia should expand local governments’ current ability to flex secondary and urban road funds to provide the most efficient GHG emissions option.

45. Virginia should undertake an assessment of the potential impact of climate change on all public and private infrastructure (e.g., roads, bridges, schools, police and fire stations, power lines) and all future infrastructure planning and decisions should consider climate change impacts. For example, VTRANS 2035 should include a complete reevaluation of the state’s transportation plans, capital investment programming, and projects in light of climate change, higher energy prices, and changing demographics. Virginia should also ensure that state and local planning consider and address the likely impacts of climate change, including the need to adapt to higher sea levels, and the Commonwealth will provide guidance and technical assistance in doing this.

46. Our workgroup recommends that the full Commission establish a specific target, in millions of metric tons, for 2025 Greenhouse Gas Emissions from transportation, in order to provide certainty and specificity to the Executive Order goal of 30% reduction from Business As Usual. We encourage other Workgroups to establish specific goals as well.

Appendix

The Workgroup considered but decided against recommending the following. We do feel these recommendations are deserving of discussion by the full Commission:

47. Virginia should adopt the California tailpipe emissions standards, as have 18 other states.

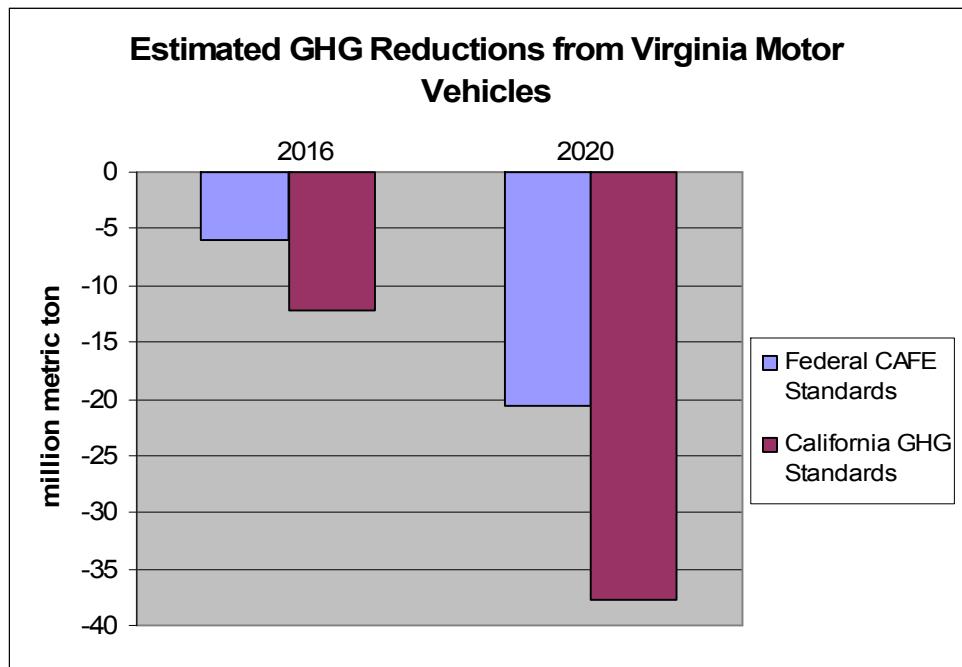
Under the Clean Air Act Section 209, states generally may not develop their own vehicle emission standards. The exception to that rule is the State of California, which may set its own standards provided they are at least as stringent as federal standards. California standards are typically more stringent than federal standards. The California

Low-Emission Vehicle (CALEV) regulations, as administered by the California Air Resources Board (CARB), apply to passenger cars, light-duty trucks and medium-duty vehicles. The CALEV regulations also include a tailpipe GHG standard that does not exist in federal emission standards and a zero-emission-vehicle (ZEV) requirement (electric vehicles). States that choose to adopt CALEV standards have the option to include the GHG and ZEV requirements or not. The GHG standards have been adopted as part of the CALEV program but California has not yet been granted the necessary waiver by EPA to implement the program. The waiver denial has triggered litigation that has yet to be resolved.

GHGs are defined by California as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, but for the purpose of their regulatory program, only the first four are subject to control. The reductions apply to motor vehicles manufactured in the 2009 model year and thereafter. The regulations require reductions in fleet averages, rather than compliance by individual vehicles, and provide flexibility by including credit generation from alternative fuel vehicles and averaging, banking, and trading of credits within and among manufacturers.

CALEV regulations require the gradual reduction in fleet average GHG emissions until they are approximately 30% below the emissions of the 2002 fleet in 2016. The regulations establish separate standards for two classes of vehicles. The first class consists of all passenger cars, plus light duty trucks and SUVs weighing 3,750 lbs. or less. These vehicles must reduce emissions by an average of 36.5% between 2009 and 2016. The second group consists of light trucks and passenger vehicles over 3,750 lbs., which must reduce emissions by 24.4% over the same time period.

States that adopt CALEV are responsible for enforcing the program provisions themselves, unlike states that operate under federal standards, where the standards are enforced by EPA.



Source: "Comparison of Greenhouse Gas Reductions for the United States and Canada Under U.S. CAFÉ Standards and California Air Resources Board Greenhouse Gas Regulations", Table 16, February 25, 2008.

Source: CARB's Regulations to Control Greenhouse Gas Emissions from Motor Vehicles, Final Statement of Reasons, August 4, 2005, p. 8

48. Virginia should lower its statewide speed limit to 60 mph.
49. Virginia should consider a "Cash for Clunkers" program, which subsidizes the retirement of the oldest, most polluting, and least efficient vehicles on the roads. The program should be calibrated to spend the most where the benefit in GHG reduction is the greatest and should consider income limitations for those who can qualify. The program's cost effectiveness should be evaluated prior to implementation, and should

only be pursued if investments will produce greater GHG reductions than an equivalent investment in transit.

Cross Cutting Recommendation:

50. Virginia should create a voluntary action plan for Virginia citizens: 10 things we can do (and should not do) in our private lives to help achieve the 30% reduction goal.